ATTACHMENT ONE

Policies and Procedures
Building Safety

Policy: Exterior sound attenuation values for SB 1525

Date: January 2, 2002

Status: Draft

Issue:
Code or ordinance requirement:
Senate Bill 1525 specifies that an thermal resistance "R" value of 19 must be achieved in the exterior wall of residential buildings. Although performance requirements of 45 decibels internal maximum noise level are specified, there are no other performance requirements for residential buildings.

Objectives:

- The ordinance reference to thermal resistance has some cross reference (mass) to sound attenuation and a prescriptive value allows inspectors and plans examiners the ability to review plans and buildings for construction standards.

Discussion:
Previously the City established an ordinance to address sound attenuation in residential buildings both inside and outside the noise contour lines. Within the lines the performance requirement, verified by an architect, specifies a maximum interior noise level of 45 db, but with not less than certain prescriptive insulation values within walls and ceilings.

The senate bill specifies an overall thermal resistance value for exterior walls of residential buildings. The total "R" (using American

Society of Refrigeration and Mechanical Engineers fundamentals handbook) value for standard construction is:

Inside and outside films –	0.9
Batt insulation in wood framing –	13
Interior cladding (1/2” drywall) –	0.5
Exterior cladding system (EIFS) –	4.4
Total	**18.8**

To achieve the small difference in insulation mass the following is suggested as an alternate method. Sound attenuation values depend on a conductivity break between materials. This is more effectively achieved with the use of an exterior cladding system bridging conventional framing.

Sound attenuation values taken from testing laboratories for a wood frame wall with 2/6 construction and R-20 batt insulation has an **STC rating of 51**, while for the foam/batt system the **STC value is 55**. The higher sound attenuation for the foam/batt system is likely due to the use of dissimiliar materials (foam and batt) providing a conductivity sound break through the wall.

Statement
The use of a foamed batt insulation system substantially conforms to the sound attenuation requirements requested by the prescriptive requirement of R 19 and is thus acceptable.